

What is claimed is:

1. An apparatus for capturing an image, comprising:

a first photoelectronic converting element to capture said image;

a second photoelectronic converting element to measure an amount of light for a purpose of a photometry operation; and

a signal outputting device to output an image-capturing start signal;

wherein a first photoelectronic converting action performed by said first photoelectronic converting element and a second photoelectronic converting action performed by said second photoelectronic converting element are commenced in response to said image-capturing start signal, and, when a signal value obtained as a result of said second photoelectronic converting action performed by said second photoelectronic converting element reaches to a predetermined value, said first photoelectronic converting action performed by said first photoelectronic converting element is finalized.

2. The apparatus of claim 1,

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wherein said signal outputting device is a release switch.

3. An apparatus for capturing an image, comprising:

a first photoelectronic converting element to capture said image;

a second photoelectronic converting element to measure an amount of light for a purpose of a photometry operation; and

a power switch to turn ON supplying an electronic power to a circuit in said apparatus;

wherein a first photoelectronic converting action performed by said first photoelectronic converting element and a second photoelectronic converting action performed by said second photoelectronic converting element are commenced when said power switch is turned ON.

4. The apparatus of claim 3,

wherein, when a signal value obtained as a result of said second photoelectronic converting action performed by said second photoelectronic converting element reaches to a predetermined value, said first photoelectronic converting

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action performed by said first photoelectronic converting element is finalized.

5. The apparatus of claim 1, further comprising:

a warning section to issue a warning, in case that said signal value does not reach to said predetermined value when a predetermined time has elapsed since said first photoelectronic converting action was commenced.

6. The apparatus of claim 1,

wherein, in case that said signal value does not reach to said predetermined value when a predetermined time has elapsed since said first photoelectronic converting action was commenced, said first photoelectronic converting action performed by said first photoelectronic converting element is finalized.

7. The apparatus of claim 1,

wherein, in case that said signal value does not reach to said predetermined value when a predetermined time has elapsed since said first photoelectronic converting action was commenced, said first photoelectronic converting action

performed by said first photoelectronic converting element is continued in response to a predetermined operation.

8. The apparatus of claim 7, further comprising:

a mode selecting device to select either a first mode in which said first photoelectronic converting action performed by said first photoelectronic converting element is continued in response to said predetermined operation, or a second mode in which said first photoelectronic converting element performs an action other than continuing said first photoelectronic converting action in response to said predetermined operation.

9. The apparatus of claim 7,

wherein, said predetermined operation is to operate a release switch.

10. The apparatus of claim 1, further comprising:

an aperture device, disposed between a subject and said first photoelectronic converting element, to vary a diameter of an aperture opening;

wherein, in case that said signal value does not reach to said predetermined value when a predetermined time has

elapsed since said first photoelectronic converting action was commenced, said aperture device increases said diameter of said aperture opening.

11. The apparatus of claim 10,

wherein said aperture device varies said diameter of said aperture opening in a non-step mode.

12. The apparatus of claim 10,

wherein said aperture device varies said diameter of said aperture opening in a stepwise mode.

13. An apparatus for capturing an image including a subject, comprising:

a photographic lens;

a light emitting device to illuminate said subject; and

an imager in which a plurality of circuit cells are two-dimensionally aligned, each of said plurality of circuit cells corresponding to each of pixels of said image, and which is so constituted that an electronic charge, photo-electronically converted from a received light and stored in each of said plurality of circuit cells, can be discharged

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from an arbitral circuit cell, without waiting for its turn in a sequential discharging order of other circuit cells;

wherein said imager comprises:

first group circuit cells to generate electronic charges corresponding to said pixels of said image including said subject, said electronic charges further being converted to image data; and

second group circuit cells to generate electronic charges corresponding to an amount of light coming from said subject, said electronic charges further being converted to a detected value; and

wherein a light emitting action of said light emitting device is instantaneously halted, when said detected value exceeds a threshold value.

14. An apparatus for capturing an image including a subject, comprising:

a photographic lens; and

an imager in which a plurality of circuit cells are two-dimensionally aligned, each of said plurality of circuit cells corresponding to each of pixels of said image, and which is so constituted that an electronic charge, photo-electronically converted from a received light and stored in

each of said plurality of circuit cells, can be discharged from an arbitral circuit cell, without waiting for its turn in a sequential discharging order of other circuit cells;

wherein said imager comprises:

first group circuit cells to generate electronic charges corresponding to said pixels of said image including said subject, said electronic charges further being converted to image data; and

second group circuit cells to generate electronic charges corresponding to an amount of light coming from said subject, said electronic charges further being converted to a detected value; and

wherein at least one of two operations of halting a generating-action of said electronic charges in said first group circuit cells and discharging said electronic charges from said first group circuit cells is performed, when said detected value exceeds a threshold value.

15. The apparatus of claim 13,

wherein said imager is so constituted that said electronic charge can be discharged from a specific circuit cell in response to a specific trigger signal.

16. The apparatus of claim 13,

wherein said second group circuit cells are a part of said first group circuit cells or are mingled with said first group circuit cells.

17. The apparatus of claim 16,

wherein second image data, corresponding to a position of a second group circuit cell, can be obtained, based on first image data obtained from first group circuit cells located at a periphery of said second group circuit cell.

18. The apparatus of claim 13,

wherein said imager further comprises:

a detecting section to detect whether or not said detected value exceeds said threshold value.

19. The apparatus of claim 13,

wherein said imager further comprises:

an outputting port to output said electronic charges, stored in said second group circuit cells, to an external section.

20. The apparatus of claim 13,



wherein, in case that said imager comprises three or more circuit cells serving as said second group circuit cells, when a value of a electronic charge stored in one of said circuit cells is greater than an averaging value of electronic charges stored in other circuit cells by a predetermined value, said detected value is derived from electronic charges stored in said other circuit cells by excluding said electronic charge stored in said one of said circuit cells, to compare said detected value with said threshold value.

21. The apparatus of claim 13,

wherein said electronic charges stored in said second group circuit cells are simultaneously discharged.

22. The apparatus of claim 13,

wherein said electronic charges stored in said second group circuit cells are discharged in response to clock signals.

23. The apparatus of claim 13,

wherein said imager is so constituted that each amount of said electronic charges stored in said second group circuit cells can be detected without discharging them.

24. The apparatus of claim 13,

wherein trigger signals are sequentially applied one by one to each of said second group circuit cells, so as to discharge each of said electronic charges, stored in said second group circuit cells, in an order of applying said trigger signals.

25. The apparatus of claim 13,

wherein each of said second group circuit cells includes at least two charge-storing sections.

26. The apparatus of claim 13,

wherein said second group circuit cells are disposed near a center of an image-capturing area of said imager.

27. The apparatus of claim 13,

wherein said electronic charges stored in said second group circuit cells are sequentially discharged one by one in

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such a manner that circuit cells located near a center of an image-capturing area of said imager are firstly discharged.

28. An imager that is employed for an apparatus for capturing an image including a subject, said apparatus incorporating a light emitting device to illuminate said subject, and said imager in which a plurality of circuit cells are two-dimensionally aligned, each of said plurality of circuit cells corresponding to each of pixels of said image, and which is so constituted that an electronic charge, photo-electronically converted from a received light and stored in each of said plurality of circuit cells, can be discharged from an arbitral circuit cell, without waiting for its turn in a sequential discharging order of other circuit cells, comprising:

first group circuit cells to generate electronic charges corresponding to said pixels of said image including said subject, said electronic charges further being converted to image data; and

second group circuit cells to generate electronic charges corresponding to an amount of light coming from said subject, said electronic charges further being converted to a detected value;

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wherein a light emitting action of said light emitting device is instantaneously halted, when said detected value exceeds a threshold value.

29. An imager in which a plurality of circuit cells are two-dimensionally aligned, each of said plurality of circuit cells corresponding to each of pixels of an image to be captured, and which is so constituted that an electronic charge, photo-electronically converted from a received light and stored in each of said plurality of circuit cells, can be discharged from an arbitral circuit cell, without waiting for its turn in a sequential discharging order of other circuit cells, comprising;

first group circuit cells to generate electronic charges corresponding to said pixels of said image including a subject, said electronic charges further being converted to image data; and

second group circuit cells to generate electronic charges corresponding to an amount of light coming from said subject, said electronic charges further being converted to a detected value; and

wherein at least one of two operations of halting a generating-action of said electronic charges in said first

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group circuit cells and discharging said electronic charges from said first group circuit cells is performed, when said detected value exceeds a threshold value.

30. The imager of claim 28,

wherein said electronic charge can be discharged from a specific circuit cell in response to a specific trigger signal.

31. The imager of claim 28,

wherein said second group circuit cells are a part of said first group circuit cells or are mingled with said first group circuit cells.

32. The imager of claim 31,

wherein second image data, corresponding to a position of a second group circuit cell, can be obtained, based on first image data obtained from first group circuit cells located at a periphery of said second group circuit cell.

33. The imager of claim 28, further comprising:

a detecting section to detect whether or not said detected value exceeds said threshold value.

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34. The imager of claim 28, further comprising:

an outputting port to output said electronic charges, stored in said second group circuit cells, to an external section.

35. The imager of claim 28,

wherein, in case that said imager comprises three or more circuit cells serving as said second group circuit cells, when a value of a electronic charge stored in one of said circuit cells is greater than an averaging value of electronic charges stored in other circuit cells by a predetermined value, said detected value is derived from electronic charges stored in said other circuit cells by excluding said electronic charge stored in said one of said circuit cells, to compare said detected value with said threshold value.

36. The imager of claim 28,

wherein said electronic charges stored in said second group circuit cells are simultaneously discharged.

37. The imager of claim 28,

wherein said electronic charges stored in said second group circuit cells are discharged in response to clock signals.

38. The imager of claim 28,

wherein each amount of said electronic charges stored in said second group circuit cells can be detected without discharging them.

39. The imager of claim 28,

wherein trigger signals are sequentially applied one by one to each of said second group circuit cells, so as to discharge each of said electronic charges, stored in said second group circuit cells, in an order of applying said trigger signals.

40. The imager of claim 28,

wherein each of said second group circuit cells includes at least two charge-storing sections.

41. The imager of claim 28,

wherein said second group circuit cells are disposed near a center of an image-capturing area of said imager.

42. The imager of claim 28,

wherein said electronic charges stored in said second group circuit cells are sequentially discharged one by one in such a manner that circuit cells located near a center of an image-capturing area of said imager are firstly discharged.

43. An imager, comprising:

a plurality of circuit cells two-dimensionally aligned in an image-capturing area, each of said plurality of circuit cells corresponding to each of pixels of an image to be captured; and

a plurality of photo-sensing elements disposed between said plurality of circuit cells;

wherein said plurality of photo-sensing elements are arranged in a line with spaces each of which is equivalent to a distance between more than two circuit cells included in said plurality of circuit cells.

44. A device for capturing an image including a subject, comprising:

an image-capturing section in which a plurality of circuit cells are two-dimensionally aligned, each of said

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plurality of circuit cells corresponding to each of pixels of said image to be captured;

a photographic lens to focus said image onto said image-capturing section;

a photo-sensing element disposed outside said image-capturing section; and

an optical system to guide a part of light, reflected from said subject and coming from said photographic lens to said image-capturing section, to said photo-sensing element.

45. An apparatus for capturing an image including a subject, comprising:

a photographic lens;

a color filter; and

an imager, in which first group circuit cells to capture said image, and second group circuit cells to obtain photometry data, are two-dimensionally aligned, each of said first group circuit cells and said second group circuit cells corresponding to each of pixels of said image;

wherein a light coming from said subject is received by said first group circuit cells after passing through said color filter, while said light coming from said subject is

received by said second group circuit cells without passing through said color filter.

46. An apparatus for capturing an image including a subject, comprising:

a photographic lens;

an imager in which a plurality of circuit cells are two-dimensionally aligned, each of said plurality of circuit cells corresponding to each of pixels of said image;

wherein said imager comprises:

first group circuit cells to capture said image;

second group circuit cells to obtain photometry data; and

color filters, each of which corresponds to one of primary colors for reproducing a color image, to cover each of said first group circuit cells so as to generate image data sets corresponding to said primary colors; and

wherein none of said second group circuit cells are covered by said color filters, and each of said second group circuit cells is disposed at such a position that it is surrounded by said first group circuit cells without aligning side by side in any directions.

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47. An apparatus for capturing an image including a subject, comprising:

a photographic lens;

an imager, in which first group circuit cells to capture said image, and second group circuit cells to obtain photometry data, are two-dimensionally aligned, each of said first group circuit cells and said second group circuit cells corresponding to each of pixels of said image; and

color filters, each of which corresponds to one of three primary colors for reproducing a color image, to cover both said first group circuit cells and said second group circuit cells;

wherein said second group circuit cells include first-color circuit cells that receives light coming from said subject through a first-color filter of said color filters, second-color circuit cells that receives light coming from said subject through a second-color filter of said color filters and third-color circuit cells that receives light coming from said subject through a third-color filter of said color filters, and photometry data is obtained on the basis of output values of said first-color circuit cells, said second-color circuit cells and said third-color circuit cells.

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48. The apparatus of claim 47,

wherein said output values of said first-color circuit cells, said second-color circuit cells and said third-color circuit cells are weighted in a process of obtaining said photometry data.

49. The apparatus of claim 47,

wherein said color filters are red, green and blue filters, respectively.

50. The apparatus of claim 1,

wherein said first photoelectronic converting action performed by said first photoelectronic converting element and said second photoelectronic converting action performed by said second photoelectronic converting element are simultaneously commenced in response to said image-capturing start signal.

51. The apparatus of claim 3,

wherein said first photoelectronic converting action performed by said first photoelectronic converting element and said second photoelectronic converting action performed

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by said second photoelectronic converting element are simultaneously commenced when said power switch is turned ON.

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